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P-101C

23 May 1955

MEMORANDUM FOR: THE RECORD

SUBJECT : Project Monitor P-101B and P-101C
Infrared Communications Systems

1. Time and Place of Meeting: [redacted] 18, 19 and 20 May 1955. [redacted] 25X1 25X1

2. Attendance: [redacted] 25X1

3. Purpose of the Meeting: The purpose of the meeting was to:

a. Outline the content of a proposal for Phase III of P-101B.

b. Outline the content of a proposal for Phases I and II (similar to those of P-101B) of P-101C.

c. Discuss the results of the testing and redesign work done in the past month.

d. Notify [redacted] that from now on the project was to be supervised by Messrs' [redacted] 25X1 25X1

4. Discussion: Proposal for Phase III of P-101B

a. Phase III will start 1 September 1955 immediately after the conclusion of the work of Phase II (the design and construction of 24 units) and will run for one year. Phase III will cover the following:

(1) Final environmental and field testing of 2 of the units built under Phase II in order to determine facts needed to write final specifications.

(2) Writing of final specifications

(3) Completion of final drawings

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(4) Writing of the final instruction and maintenance manual.

(5) A maintenance facility to cover factory repairs on the 20 units.

It is expected that items (1) through (4) will be completed within 6 months or less of the starting date. It was decided, moreover, to leave any further redesign and preproduction work until such time as a definite requirement for more units may arise.

b. Proposal for Phases I and II of P-101C Infrared Communications System, Miniature.

Phase I of P-101C will be a study phase. Because of the work done under P-101B on detectors and sources and modulation means, there will be little emphasis on these points. Main emphasis will be on a study of system operation including a determination of proper beamwidth and search-find methods.

Phase II will form the major part of the work under the new proposal. It will cover the design and construction of 24 prototype units.

The operational specifications for the Model C unit were further discussed. At present they are:

(1) Primary Use: In conjunction with a Model B base station.

(2) Secondary Use: With another Model C unit.

(3) Size: 2" x 4" x 6" Maximum (one perimeter 12 inches) This is roughly coat pocketable.

(4) Weight: As light as possible but not critical.

(5) Range: 1 Mile ACW or better.

(6) Life: 1 to 2 hours transmit at 70°F

(7) Power: Batteries either chargeable or not.

(8) The unit will be self contained except for spares, Kodapod type mount and battery charger if necessary.

(9) It is desirable to have (1) accomplished without modification to the Model B unit.

(10) Beamwidths and Search-Find Methods: to be determined.

It is hoped that the work outlined above can be completed in 8 months.

c. P-101B Progress.

The environmental testing has been proceeding fairly well. The vibration tests and temperature cycling tests have been completed to date. The vibration test was identical to that described previously except that a maximum amplitude of vibration of .060 was used. Several weaknesses in the equipment structure were located and corrected. It was found also that the leads inside one of the vibrators failed and consequently, new JAN vibrators are being installed. In the temperature cycling tests it was found that the potted part of the viewer cracked. Attempts are being made to correct this difficulty.

The life tests on the batteries have gone through 20 cycles to date. The batteries have 50% more than rated capacity at present. It was found that the batteries put through the vibration test failed shortly thereafter.

The redesign work is proceeding satisfactorily. The yoke has been redone as have the tripod legs. Work is being done on the covers and clasps. The viewer reticle and eyepiece have been redesigned. Various of the details mentioned in previous reports and conversations have been or are being covered satisfactorily.

An optical sight has been selected. It is a 2½ power rifle telescope sight made under the name of Boone. The sight is about 3" long and 1½" in diameter and fits nicely in the compartment below the bellows. The weight of the sight is 3 ounces. [redacted] will attempt to illuminate the reticle of this sight for night use. 25X1

[redacted] is presently planning to have a first unit of the final group finished by the 10th of June. 25X1

5. Actions: [redacted] will complete the proposals for Phase III of P-101B and Phases I and II of P-101C by the middle of June. 25X1

[redacted] 25X1

Distribution:
Orig. - P-101B
1 - P-101C
1 - [redacted] 25X1
1 - Chrono.
AST/ata

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